CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ORDER No. 92-02

WASTE DISCHARGE REQUIREMENTS
FOR
COUNTY OF SAN DIEGO
SAN MARCOS SANITARY LANDFILL

SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that:

1. On November 27, 1978, this Regional Board adopted Order No. 78-78, "Waste Discharge Requirements for San Diego County Department of Public Works San Marcos Sanitary Landfill". Order No.78-78 established requirements for the disposal of approximately 11.3 million cubic yards of nonhazardous municipal wastes to the landfill.

2. The entire site of the San Marcos Sanitary Landfill covers approximately 205 total acres of Section 33, T12S, R3W, San Bernardino Base and Meridian, in the San Elijo Hydrologic Subarea (4.61) of the Escondido Creek Hydrologic Area (4.60) of the Carlsbad Hydrologic Unit (4.0). The area of the site receiving wastes is 103 acres. See Attachment #1.

3. On August 3, 1990, the County of San Diego, Department of Public Works (hereinafter discharger), submitted an incomplete Report of Waste Discharge (RWD) entitled, "Amended Report of Waste Discharge for San Marcos Landfill Expansion, County of San Diego", prepared by Dudek & Associates, Inc. and dated August 1990, proposing a vertical expansion of the landfill by approximately 200 feet. The expansion would provide 8.75 x 10^6 cubic yards of additional capacity at the landfill.

4. In order to complete the RWD, the discharger submitted the following supplemental information as part of the RWD:

   a. Geology and Hydrology Section prepared by Ninyo & Moore consultants and dated July 24, 1990, and updated on October 1, 1990;

   b. Surface Water Drainage, Addendum A, prepared by the discharger and dated October 10, 1990;

   c. Final Environmental Impact Report prepared by Michael Brandman Associates and dated October 1, 1990;

   d. Slope Protection and Erosion Control, Addendum B,

prepared by Dudek & Associates Inc. and dated November 15, 1990;

e. Overburden Pressure and Earthquake Analysis, Addendum C, prepared by Ninyo & Moore and dated November 15, 1990;

f. Letter dated November 15, 1990, from the discharger proposing additional monitoring wells;

g. The supporting documents for seismic design by Ninyo & Moore Geotechnical Consultants received by this office on November 26, 1990;

h. The construction plans for the San Marcos Underdrain Extension prepared by the discharger on August 29, 1985, and received by this office on December 18, 1990;

i. Ground Water Quality Map and Ground Water Flow Map prepared by Ninyo & Moore Geotechnical Consultants and dated December 20, 1990;

j. Hazardous Waste Exclusion Program Summary prepared by the discharger and dated January 8, 1991;

k. Report of Disposal Site Information for San Marcos Vertical Expansion prepared by the discharger, dated December 1990; and

l. Water Quality Verification Program for the San Marcos Landfill Expansion Project by Michael Brandman Associates and dated February 22, 1991.

5. The RWD indicated that only nonhazardous and inert solid wastes will be discharged to the proposed vertical expansion. The solid waste will consist of residential refuse, commercial solid wastes, tires, disinfected medical wastes, and construction/demolition debris. The RWD notes that a one-year sampling program, conducted at the San Marcos Landfill, indicated that approximately 5 percent of the waste stream (by weight) is delivered by private citizens and 38 percent is delivered by commercial vehicles. The remaining 57 percent is delivered by refuse collection vehicles containing waste with the following composition: 25.8% cardboard/other paper: 6.2% wood wastes; 22.2% yard wastes; 6.0% inert materials; 11.0% composite /salvageable; 3.8% metals; 10.9 organic; 2.3% textiles; 9.8% glass/plastics ; 1.1% residuals

6. To prevent illegal discharge of hazardous waste to the landfill, the discharger initiated a comprehensive hazardous waste exclusion program on July 1, 1990.

7. A gas extraction system consisting of 35 gas wells and a power plant is currently in operation at the landfill. The gas extraction system is regulated under Order No. 85-49, adopted

by this Regional Board on June 10, 1985.

8. The Solid Waste Assessment Test (SWAT) report dated June 26, 1987, indicated that volatile organic constituents (chloroform, trichloroethane, methylene chloride, and 1,1-dichloroethane) were detected in monitoring wells SMGW-17 and -23 located around the landfill as shown in Attachment #2. Subsequent monitoring on March 14, 1988, and January 1, 1989, did not confirm the SWAT results.

9. Technical Change Order No. 2 was issued on December 28, 1989, to verify potential releases of contaminants from the landfill, to establish water quality background data, and to upgrade the monitoring and reporting requirements for the landfill in accordance with Article 5, Title 23 of the California Code of Regulations (23 CCR).

10. The California Code of Regulations, Title 23, Division 3, Chapter 15 (hereinafter 23 CCR) specifies waste and site classification criteria and waste management requirements for landfills. Pursuant to 23 CCR Subsection 2510 (d), expansions of existing waste management units must comply with all provisions of the regulations which are applicable to new waste management units. The existing landfill site is required to be reclassified pursuant to Subsections 2591(c) and 2510(d). The Regional Board shall initiate the reclassification process with the request of the discharge to submit the appropriate technical data.

11. Subsection 2533 (b)(1) of 23 CCR states that new Class III landfills shall be sited where soil characteristics, distance of waste to ground water, and other factors will ensure no impairment of beneficial uses of surface water or of ground water beneath or adjacent to the landfill.

12. At its meeting of March 11, 1991, the Regional Board adopted Order No. 91-25 prohibiting vertical expansion of the San Marcos Sanitary Landfill. The Regional Board found the information submitted in the Report of Waste Discharge noted in Finding No. 4 of this Order to be insufficient to conclude that the landfill complies with the siting criteria specified by 23 CCR, Subsection 2533 (b) (1). Order No. 91-25 states that the prohibition may be reconsidered by the Regional Board upon submittal of documentation demonstrating that the San Marcos Landfill site complies with the siting criteria specified by 23 CCR, Subsection 2533 (b)(1).

13. The County of San Diego certified a final environmental impact report (EIR) in accordance with the California Environmental Quality Act, Public Resources Code, Section 21000, on November 13, 1990.

14. On July 23, 1991, the Superior Court in the County of San Diego ruled that the EIR did not adequately address the surface and ground water impacts associated with landfill operations. The Superior Court ruled in the Writ of Mandate No. 631783 that the County of San Diego must "revise the surface and groundwater section of the EIR so that it complies with the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) and prepare a mitigation monitoring plan that identifies who will be responsible for ensuring that the County implements each mitigation measure". The Superior Court did not mandate any other revisions to the certified EIR.

15. On December 17, 1991, the County of San Diego certified the Supplemental Environmental Impact Report (SEIR) for the San Marcos Sanitary Landfill.

16. The SEIR indicated that the proposed vertical expansion of the landfill would have the following potential significant effects on water quality:

    a. Potential degradation of surface water quality from sediments and chemicals; and

    b. Potential impact on ground water from leachate generation from the landfill.

17. The SEIR identified the following measures to mitigate or avoid significant impacts to surface and ground waters:

    a. Construct sedimentation/retention basins to retain all landfill runoff resulting from a 100-year frequency storm event. The basins would be lined to prevent percolation in the event waste products were inadvertently washed from the landfill; and

    b. A clay liner would be installed over the existing fill to prevent infiltration. Intermediate cover would also consist of clay layers. During the rainy season, a highly impermeable daily cover would be used on active landfill surfaces.

18. The Regional Board has reviewed the EIR and SEIR and finds that the measures identified in Finding No. 17 will mitigate or avoid the significant impacts to surface and ground waters identified in the SEIR.

19. On December 6, 1991, the discharger submitted to the Regional Board documentation entitled, Additional Information and Documentation for Reconsideration of California Regional Water Quality Control Board, San Diego Region, Order No. 91-25, "An

Order Prohibiting the Vertical Expansion of the County of San Diego San Marcos Sanitary Landfill, San Diego County", hereinafter referred to as Response to Order 91-25 (RTO 91-25). The discharger also submitted a certified Supplemental Environmental Impact Report dated December 17, 1991, which was "prepared to examine the potential environmental impacts and develop mitigation measures appropriate for the potential surface and ground water impacts of the proposed expansion to the San Marcos Landfill". The additional documentation provides data and other technical information accumulated from further study of the landfill and underlying and adjacent ground and surface waters by the discharger. The additional data and other technical information has been reviewed by the staff of the Regional Board, enabling the Regional Board to make additional findings pertinent to vertical expansion of the San Marcos Sanitary Landfill as proposed.

20. Reconsideration of the prohibition of Order 91-25 by the Regional Board is dependent upon the submittal of documentation demonstrating that the San Marcos Landfill site complies with the siting criteria specified by 23 CCR Subsection 2533(b)(1). These siting criteria are:

(b) Geologic Setting
(1) New Class III and existing Class II-2 landfills shall be sited where soil characteristics, distance form waste to groundwater, and other factors will ensure no impairment of beneficial uses of surface water or of groundwater beneath or adjacent to the landfill. Factors that shall be evaluated include:
(A) size of the waste management unit,
(B) permeability and transmissivity of underlying soils,
(C) depth to groundwater and variations in depth to groundwater,
(D) background quality of groundwater,
(E) current and anticipated use of the groundwater, and
(F) annual precipitation.

21. The discharger indicates in the RTO 91-25 that soil characteristics beneath the existing landfill consist of colluvium/topsoil and alluvium ranging in thickness to 17 feet. The alluvium consists of sand, silt, gravel, and clay. Beneath the colluvium/topsoil and alluvium is the Santiago Peak Volcanics consisting of fractured metavolcanic rock. Some portions of the existing landfill may be in contact with the Santiago Peak Volcanics.

22. The discharger indicates in the RTO 91-25 that groundwater occurs in fractures beneath and in the vicinity of the San Marcos Landfill. Water level measurements collected by the discharger in 1991 indicates that to the west of the landfill

the depth to groundwater below the base of the existing landfill has ranged from less than 30 feet below land surface (bls) in well SMGW-37S and SMGW-37D to greater than 150 feet bls in well SMGW-16. To the north, east, and south of the landfill, water levels measured in wells SMGW-26 and SMGW-23 are above the base of the existing landfill. These wells are constructed along the slopes of the hills surrounding the landfill. The discharger has indicated that groundwater flow indicated in the wells to the north, east, and south is radially toward the west with vertical flow components preventing contact with the landfill trash.

During a landfill site investigation in 1977, several seeps from the canyon wall were noted and were attributed to infiltration of rain water through ground surface fractures. Further, on June 26, 1980, Regional Board staff reported seepage at the base of the landfill. The seepage was considered to be a result of a probable rise in groundwater level.

23. Hargis + Associates, Inc. analysis of the discharger's water level data and historic records indicates that groundwater has contacted the base of the landfill trash intermittently.

24. The discharger has indicated that placement of a clay liner underneath the existing waste material is not feasible and would be unnecessarily burdensome.

25. The EIR indicated that the proposed vertical expansion of the landfill would have the following potential significant effects on water quality:

    a. Potential degradation of surface water quality from sediments and chemicals.

    b. Potential contamination of ground water from leachate seepage from the landfill. The EIR indicated that by placing additional waste over the existing unlined site, the project could add significantly to the existing potential ground water contamination currently being investigated by the Regional Water Quality Control Board.

26. The Regional Board concludes that the existing dewatering systems can be approved as an alternative to the requirement of a minimum of five feet of separation between ground water and waste material. The Board finds that the requirement is consistent with the performance goal addressed by the requirement and affords equivalent protection.

27. The discharger indicates in the RTO 91-25 that the existing landfill comprises approximately 103 acres and permitted to

receive approximately 11.3 million cubic yards of nonhazardous municipal solid waste. The discharger wants to extend the service life of the San Marcos Landfill by proposing a two-phase expansion:

1. Raise the maximum elevation for the permitted fill from 750 feet above mean sea level (msl) to 950 feet msl.
2. Expand the property boundaries of the site to include an additional 136 acres. The second phase expansion is not being considered by this order.

28. The discharger indicates in the RTO 91-25 that fractures control the permeabilities of the Santiago Peak Volcanics underlying the landfill. The discharger presented data using photo-lineament interpretation and VLF geophysical surveys suggesting that the principal lineaments and fractures "in and peripheral to the landfill are the Copper Creek lineament, trending N20 E from Copper Creek north along the western boundary of the landfill and two intersecting lineaments trending N45 W through the middle of the landfill and N60 W along Questhaven Road".

29. Hargis + Associates, Inc. has concluded that fracture and lineament patterns, water levels in onsite and offsite wells, and water quality data indicate that the discharger's interpretations regarding the predominant westerly direction of groundwater flow is only one possibility. Another predominant fracture flow direction may be south through the Copper Creek lineament. Additional monitor wells are necessary to define groundwater flow directions.

30. The discharger indicates in the RTO 91-25 that hydraulic conductivities in wells tested at the landfill range from 550 feet per day (ft/day) in well SMGW-30 to 1x10-5 ft/day in well SMGW-33. Well SMGW-30 is located west of the landfill on a northwest trending lineament. Well SMGW-33 is located southeast of the landfill in the vicinity of another northwest trending lineament.

31. The discharger indicates in the RTO 91-25 that background surface water quality is variable. Total dissolved solids (TDS) content in surface water sample locations off site have ranged from 1,529 mg/l in surface water sample Exit Stream to 82 mg/l in surface water sample SMSW-4. The Exit Stream sample was collected just outside of the western limits of the landfill property. The SMSW-4 sample was collected just the northeastern limits of the landfill property. The Exit Stream sample was collected in 1980. TDS content in surface water samples onsite have ranged from 11,194 mg/l in landfill surface water sample SMSW-6B to 76 mg/l in landfill surface water sample SMSW-3. Surface water sample locations SMSW-3

and SMSW-6B are located in the vicinity of the northwest corner of the landfill. Samples collected from SMSW-3, SMSW-4, and SMSW-6B were collected in 1991.

The discharger has indicated in RTO 91-25 that statistical analysis of general minerals from surface water samples upgradient of the landfill compared with surface water samples downgradient of the landfill indicated that only sulfate concentrations were statistically higher downgradient.

32. Comparison by Hargis + Associates, Inc. of surface water sample results for general minerals with the San Elijo Basin Plan Water Quality objectives indicate that four of five offsite surface water sample locations have had water sample results that have exceeded the San Elijo Basin Water Quality Objectives for TDS, chloride, iron, or sulfate. All thirteen surface water sample locations have had water sample results that have exceeded the San Elijo Basin Water Quality Objectives for TDS, chloride, iron, manganese, or sulfate.

These data indicate that onsite and offsite surface waters naturally exceed the San Elijo Basin Water Quality Objectives for some minerals.

33. The discharger indicates in the RTO 91-25 that background groundwater quality, as indicated by off site domestic and irrigation wells east and south of the landfill, is variable. Total dissolved solids (TDS) content in offsite wells range from 2,199 mg/l in offsite well OFSM-12 to 663 mg/l in offsite well OFSM-7. Well OFSM-12 is located approximately 6000 feet southwest of the landfill. Well OFSM-7 is located approximately 5000 feet east of the landfill. TDS content in on site wells have ranged from 24,320 mg/l in well SMGW-2 to 152 mg/l in well SMGW-9. Well SMGW-2 is located west of the landfill and has been dry since 1985. The discharger indicated that the high TDS content in this well may be from the clays that this well is completed in.

The discharger has indicated in RTO 91-25 that statistical analysis of general minerals from groundwater samples from wells upgradient of the landfill compared with groundwater samples from wells downgradient of the landfill indicated that only chloride and potassium concentrations were statically higher in downgradient wells.

34. Comparison by Hargis + Associates, Inc. of groundwater sample results for general minerals with the San Elijo Basin Water Quality Objectives indicates that 13 of 16 offsite wells have had water sample results that have exceeded the San Elijo Basin Water Quality Objectives for TDS, chloride, or sulfate. Fifteen of twenty onsite wells have had groundwater sample

results that have exceeded the San Elijo Basin Water Quality Objectives for TDS, chloride, or sulfate.

These data indicate that onsite and offsite groundwaters naturally exceed the San Elijo Basin Water Quality Objectives for some minerals.

35. The groundwater quality data indicates that groundwater beneath the landfill has been impacted. The discharger indicates in the RTO 91-25 that the detection of volatile organic compounds (VOCs) in various surface water and groundwater samples may be partially due to contamination by drilling, well construction, laboratory error, or sampling error. The discharger did not present conclusive evidence to prove these claims.

Surface water samples were collected in 1991 from Pond 1. Pond 1 collects water from the subdrain and surface runoff. Pond 1 surface water samples contained concentrations of 1,1-dichloroethane (1,1-DCA) above the Maximum Contaminant Level (MCL). Surface water samples in 1991 from Pond 1 have detected approximately 20 other VOCs. Chemical oxygen demand (COD) has ranged from 7.2 to 181 mg/l in surface water samples from Pond 1 since January 1987.

Groundwater samples were collected in all 15 onsite monitor wells and sampled for VOCs in 1991. Nine of the 15 onsite monitor well water samples contained detectable concentrations of VOCs. Water samples from monitor well SMGW-31 contained concentrations of 1,1-DCA, tetrachloroethylene (PCE) , and trichloroethylene (TCE) above the MCL. Monitor well SMGW-31 is located west of the base of the landfill. Water samples from monitor well SMGW-35 contained concentrations of 1,1-DCA above the MCL. Monitor well SMGW-35 is located north of the landfill.

The discharger indicates in the RTO 91-25 that the VOCs detected in water samples from monitor wells SMGW-31 and SMGW-35 may be from surface water runoff of the landfill. However, as indicated by Hargis + Associates, Inc. if low concentrations of leachate are migrating to shallow fractures in contact with the base of the landfill, concentrations of VOCs would be detected in monitor wells SMGW-31 and SMGW-35.

36. The Regional Board finds, based upon the available ground water data, that there is statistically significant evidence of a release from the existing landfill. The discharger shall comply with the appropriate provisions of Article 5, Chapter 15 of CCR, including Section 2550.8, in response to the Regional Board's finding.

37. Hargis and Associates, Inc. has questioned the data presented in the Trash Moisture Analysis sections. The discharger indicates in the RTO 91-25 that the trash has a moisture-holding capacity of 60 percent by weight. The test data for unconfined trash at a density of 45 pounds per cubic foot (pcf) is used. It must be remembered that trash is a compressible solid which becomes denser with confining pressure. The trash at the bottom of the landfill, after the addition of the proposed 200-foot expansion, will have 400 feet of confinement or approximately 180 pounds per square inch (psi) confinement. At this extreme, the material will be 80 pcf with a water-holding capacity of 30 percent.

    The assumption that the average moisture-holding capacity is 39 percent which is indicative of southern California is much closer to reality than the 60 percent continually stated in the revised plan. Compaction of the existing landfill will occur due to overburden from the vertical expansion.

38. The fact that a drainage blanket will intercept any leachate at the new clay cap at elevation 750 mitigates any leachate generation.

39. Hargis + Associates, Inc. has questioned the data presented in the Slope Stability section. The discharger indicates in RTO 91-25 that slope stability can be maintained with an apparent slope ratio no steeper than 2.75:1. Concerns were raised that the area on the west side of the landfill was underlain by Del Mar Formation (clay), as was reported by Ninyo and Moore. The data in the Woodward Clyde report, dated February 14, 1984, showed the area was not Del Mar Formation, but rather a weathered zone of Santiago Peak Volcanics. The clayey Santiago Peak Volcanic material was very strong and probably only 4 to 8 feet thick. This clay actually will reduce infiltration of water or leachate.

    New slope stability calculations were performed and show a factor of safety of 2.1 for the proposed raised landfill slope. No base failures would be expected. A surficial stability calculation for the proposed 3:1 (horizontal to vertical) clay and soil final slope cover had a factor of safety of 1.94. Calculations confirmed that no slope stability problems exist for the proposed expansion but the clay for the 2 foot cover must be tested to meet minimum shear strength criteria.

40. The discharge indicates in RTO 91-25 that a desilting basin facility adequate to hold a 100-year, 24-hour storm (4.0 inches) would be constructed. It is assumed that the basins would store storm runoff water until it could be tested and proven safe for release.

Assuming the site to be drained is 103 acres, the basins must hold approximately 34 acre-feet of runoff water and be designed to provide no less than 2 feet freeboard. The basins will be lined and will be designed to allow for cleaning.

For drainage control, it is planned to construct gunite V ditches for drainage. Gunite V ditches on such rubbish may quickly fail from settlement induced deformation. Half round corrugated metal pipes are found to perform better due to their flexibility and ability for realignment.

41. Hargis + Associates, Inc. has questioned the data presented in the Landfill Design section. The discharger indicates in RTO 91-25 that the existing landfill will be covered with two feet of clay having a permeability constant less than 10^{-6} centimeters per second (cm/sec). The 2-foot clay could serve as a liner, however, proper design, quality control, construction and uniformity of placement will be necessary. The volume of clay needed for the 2-foot liner over the 103 acre site would total approximately 300,000 cubic yards.

    The discharger reports in RTO 91-25 that the vertical expansion will contain intermediate cover every 20 feet with clay having a permeability less than 10^{-6} centimeters per second(cm/sec). Each intermediate cover would require importation of approximately 150,000 cubic yards.

42. One of the mitigation measures proposed in the SEIR was the construction of multiple clay layers to prevent infiltration. Clay layers every 20 feet seems an extreme measure which has little benefit. If the multiple clay layers improve the gas system, then the cost may be justifiable.

43. Hargis & Associates, Inc., environmental consultants for the Regional Board, reviewed the Report of Waste Discharge documents and the "Response to Order No. 91-25" and made the following conclusions:

    a. It is possible that more than one flow path for groundwater exists in the vicinity of the landfill because of the highly fractured nature of the Santiago Peak Volcanics.

    b. Present day operations at the San Marcos Landfill have caused a localized impact to groundwater beneath the landfill.

    c. Present day operations at the San Marcos Landfill have not impaired the beneficial use of surface or groundwater adjacent to the landfill.

d. If the proposed engineering design for the 200 foot vertical expansion of the landfill is complied with, the 200 foot vertical expansion will not impair the beneficial use of surface or groundwater adjacent to the landfill.

e. If the County's assumption that the impact to groundwater beneath the landfill is caused by surface water runoff from the Landfill percolating to the groundwater is correct, the present day impacts to groundwater will eventually be mitigated by the proposed engineering design for the 200 foot expansion. If, however, low concentrations of leachate are migrating to shallow fractures in contact with the base of the landfill, impacts to the groundwater beneath the Landfill will continue with or without the vertical expansion.

44. The discharger has proposed the following measures to meet or exceed requirements of 23 CCR:

a. A minimum 2-foot thick clay liner with permeability of 10^{-6} cm/sec to cover the entire existing landfill;

b. Immediately abo ve the clay layer a 12- to 18-inch thick permeable "sand" layer will be placed to serve as a leachate subdrain layer;

c. Multiple 12-inch clay intermediate cover layers at 20-foot intervals within the 200-foot thick lift, each layer having a permeability of 10^{-6} cm/sec;

d. Daily cover having a permeability of approximately 3 x 10^{-5} cm/sec will be used on the active portion of the landfill to further reduce infiltration;

e. Final cover consisting of a 24-inch compacted foundation of approved soil, a 24-inch clay cap of 10^{-6} cm/sec permeability over the foundation layer, a 12-inch vegetative soil cover above the clay layer, and grading of the final surface to facilitate drainage;

f. 3:1 final slopes, clay-capped as described above;

g. Collection and retention onsite of all surface runoff from the landfill resulting from a 24-hour 100-year frequency storm event. The retention basins would be lined to prevent percolation of contents in the event that waste materials were present in runoff from the landfill.

h. Provision of a 1-acre-foot lined basin to retain all discharges from the underdrain system.

i. A landfill gas collection system; and

j. Use of SMGW-30 as a planned hydraulic barrier to prevent downstream migration of leachate in the event that leachate production occurs.

45. The Regional Board adopted the Comprehensive Water Quality Control Plan - San Diego Basin (Basin Plan) on July 15, 1974. Subsequent to its adoption by the Regional Board, the Basin Plan was modified in an attempt to obtain statewide unity of format and expression for certain water quality parameters. The modified Basin Plan was adopted by the Regional Board on March 17, 1975 and approved by the State Water Resources Control Board (State Board) on March 20, 1975. The modified Basin Plan was conditionally approved by the Environmental Protection Agency (EPA) on July 26, 1976. The Regional Board on December 9, 1991 made further revisions to the Basin Plan in its effort to update water quality standards and designated beneficial uses. There were no changes in standards or beneficial uses for the basin in which the landfill is located.

Numerous changes to the Basin Plan, including changes in beneficial uses of water quality objectives in HSA 4.61 where the landfill is located, have been made over the years by the Regional Board through the processing of Basin Plan Amendments. The Regional Board adopted an overall update of the Basin Plan, incorporating past Basin Plan Amendments as well as making other changes, on December 17, 1990. Additional modifications to the overall update were proposed by the Regional Board on October 28, 1991. Adoption of the updated plan occurred on December 9, 1991. Upon review and approval by the State Board and EPA, the updated Basin Plan will become effective.

46. The Basin Plan established the following beneficial uses for the surface waters of the San Elijo Hydrologic Subarea (4.61):

a. Municipal and Domestic Supply
b. Agricultural Supply
c. Industrial Service Supply
d. Water Contact Recreation
e. Non-contact Water Recreation
f. Warm Fresh Water Habitat
g. Cold Fresh Water Habitat
h. Wildlife Habitat
i. Preservation of Rare and Endangered Species
j. Fish Spawning

47. The Basin Plan established the following beneficial uses for the ground waters of the San Elijo and Batiquitos Hydrologic Subareas:

    a. Municipal and Domestic Supply
    b. Agriculture Supply
    c. Industrial Service Supply

48. The Basin Plan established the following Water Quality Objectives for the San Elijo and Batiquitos Hydrologic Subareas:

Constituent	Surface Water	Ground Water	
		San Elijo HSA	Batiquitos HSA
Total Dissolved Solids	500 mg/L	2800mg/L	3500mg/L
Chloride	250 mg/L	700 mg/L	800 mg/L
Percent Sodium	60%	60%	60%
Sulfate	250 mg/L	600 mg/L	500 mg/L
Nitrate (as NO_3)	---	45 mg/L	45 mg/L
Nitrogen & Phosphorus	*[1]	---	---
Iron	0.3 mg/L	0.3 mg/L	0.3 mg/L
Manganese	0.05 mg/L	0.05 mg/L	
Methylene Blue Active Substances	0.5 mg/L	0.5 mg/L	0.5 mg/L
Boron	0.5 mg/L	1.0 mg/L	2.0 mg/L
Odor	None	None	None
Turbidity	20 NTU	5 NTU	5 NTU
Color	20 Units	15 units	15 units
Fluoride	1.0 mg/L	1.0 mg/L	1.0 mg/L

Note: The above concentration not to be exceeded more than 10

---

[1]Concentrations of nitrogen and phosphorus, by themselves or in combinations with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth. Threshold total Phosphorus (P) concentrations shall not exceed 0.05 mg/L in any stream at the point where it enters any standing body of water, nor 0.025 mg/L in any standing body of water. A desired goal in order to prevent plant nuisances in streams and other flowing waters appears to be 0.1 mg/L total P. These values are not to be exceeded more than 10 percent of the time unless studies of the specific water body in question clearly show that water quality objective changes are permissible and changes are approved by the Regional Board. Analogous threshold values have not been set for nitrogen compounds; however, natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld. If data are lacking, a ratio of N:P = 10:1 shall be used.

percent of the time.

49. The Basin Plan established the following ground water objectives which apply to all ground water of the basin:

Tastes and Odors

Ground waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

Bacteria

Ground waters used for domestic or municipal supply (MUN) shall conform to State of California Department of Health regulations for bacteriological quality specified in the California Code of Regulations, Title 22, Chapter 15, Article 3.

Chemical Constituents

Ground waters designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels specified in California Code of Regulations, Title 22, Chapter 15, Article 4, Section 64435. Ground water used as a drinking water supply shall not exceed the levels specified in California Code of Regulations, Title 22, Chapter 15, Article 8, Section 64473, Table 6, in its present form or as it may be amended.

Should there be any conflict between these limits and those specified in Table 4-1 of the Basin Plan, the more stringent shall apply at all times.

Ground water designated for use as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use.

Radioactivity

Ground water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the limits specified in California Code of Regulations, Title 22, Chapter 15, Article 5, Sections 64441 and 64443.

50. The Basin Plan contains the following prohibitions which are applicable to the site:

"The dumping or deposition of oil, garbage, trash or other solid municipal, industrial or agricultural waste directly into inland waters or watercourses or adjacent to watercourses in any manner which may permit its being washed into the watercourse is prohibited."

"Dumping or deposition of oil, garbage, trash or other solid municipal, industrial or agricultural waste into natural or excavated sites below historic water levels or deposition of soluble industrial wastes at any site is prohibited, unless such site has been specifically approved by the Regional Board for that purpose."

"Land grading and similar operations causing soil disturbance which do not contain provisions to minimize soil erosion and limit suspended matter in runoff are prohibited."

51. The Regional Board has considered all water resource related environmental factors associated with the existing and the proposed discharge and has determined that the proposed vertical expansion complies with the criteria specified under 23 CCR for siting a Class III landfill.

52. The Regional Board considered factors, including, but not limited to the following:

    a. Past, present, and probable future beneficial uses of water;

    b. Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto;

    c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area;

    d. Economic considerations;

    e. The need for developing housing within the region;

    f. Beneficial uses to be protected and water quality objectives reasonably required for that purpose;

    g. Other waste discharges; and

    h. The need to prevent nuisance.

53. The Regional Board in a public meeting on January 22, 1992 in Escondido heard testimony and considered all comments pertaining to the proposed discharge.

IT IS HEREBY ORDERED, the County of San Diego shall comply with the following Waste Discharge Requirements for both the existing landfill site and for the vertical expansion landfill site:

A. PROHIBITIONS

1. The discharges of wastes to lands which have not been specifically described to the Regional Board and for which valid waste discharge requirements are not in force are prohibited.

2. The discharge of any hazardous waste materials as defined in Title 22 of CCR at the landfill is prohibited.

3. The discharge of solid waste, liquid waste or leachate to surface waters, surface water drainage courses or ground water is prohibited.

4. The discharge of waste shall not cause the following:

   a. Occurrence of coliform or pathogenic organisms in waters pumped from the basin;

   b. Presence of objectionable tastes and odors in waters pumped from the basin;

   c. Waters pumped from the basin to foam;

   d. Presence of toxic materials in waters pumped from the basin;

   e. Changes in the pH value of the water pumped from the basin outside the range of 6.0 to 9.0 units;

   f. Violation of the objectives for the ground or surface waters of the San Elijo Hydrologic Subarea or the ground waters of the Batiquitos HSA, as established in the updated Basin Plan; and

   g. Odors, vectors, and other nuisances of waste origin beyond the limits of the San Marcos Landfill.

5. Disposal of designated waste at the San Marcos Sanitary Landfill is prohibited unless the discharger establishes in accordance with 23 CCR Subsection 2520 (a)(1) and to the satisfaction of the Regional Board, that the designated waste will present a lower risk to water quality.

6. Disposal of sewage or water treatment sludge or other high moisture waste, containing less than 50% solids at the San Marcos Sanitary Landfill is prohibited except as provided for

by 23 CCR Subsections 2520 (d)(3) and 2523 (c). The dewatered sewage or water treatment sludge may be discharged at a Class III landfill under the following conditions, unless DHS determines that the waste must be managed as hazardous waste:

a. The San Marcos Sanitary Landfill is equipped with a leachate collection and removal system;

b. The sludge contains at least 20 percent solids if primary sludge, or at least 15 percent solids if secondary sludge, mixtures of primary and secondary sludge, or water treatment sludge; and

c. A minimum solids-to-liquid ratio of 5:1 by weight shall be maintained to ensure proper moisture holding capacity of waste material to prevent movement of leachate. Any foreign solid added to the sludge must be non-decomposable and of specific retention equal to or greater than the sludge substance. Nonabsorbent solids such as glass, metals, etc. will not be included in the solid-to-liquid ratio of 5:1 estimation.

7. It is prohibited to discharge wastes which have potential to reduce or impair the integrity of the containment structure or which, if commingled with other wastes in the San Marcos Landfill, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:

a. Require a higher level of containment than provided by the San Marcos Landfill;

b. Constitute "restricted hazardous wastes" or

c. Impair the integrity of containment structure.

B. DISCHARGE SPECIFICATIONS

1. Only nonhazardous wastes and inert wastes as described by 23 CCR Sections 2523 and 2524 may be disposed at the San Marcos Landfill.

2. The discharger is responsible for accurate characterization of wastes, including determinations of whether or not wastes will be compatible with containment features and other wastes at the San Marcos Landfill in order to comply with 23 CCR Subsection 2520(b), and whether or not wastes are required to be managed as hazardous wastes under 22 CCR Section 66300.

3. The discharger shall comply with all applicable requirements of 23 CCR Chapter 15, Article 3 at the San Marcos Landfill.

Article 3 establishes siting, design, construction, operation, and maintenance standards. 23 CCR Sections 2530 and 2533, and Table 3.1 are applicable in whole or in part to the San Marcos Sanitary Landfill.

4. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through waste.

5. The San Marcos Sanitary Landfill shall be adequately protected from any washout and erosion of waste materials. Adequate protection is defined as protection from at least a 100-year flood.

6. Annually, prior to the anticipated rainy season but not later than October 31, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.

7. The closure of the San Marcos Landfill shall be in accordance with Articles 8 and 9 of 23 CCR Chapter 15 and under the direct supervision of a California registered civil engineer or certified engineering geologist.

8. At closure, the San Marcos Landfill shall receive a final cover which is designed and constructed to function with minimum maintenance and consists of, at a minimum, 2-foot thick foundation layer which may contain waste materials, overlain by a 2-foot thick clay liner having a permeability of 1×10^{-6} cm/sec or less, and finally by a 1-foot thick vegetation soil layer, or an engineered equivalent final cover approved by the Regional Board pursuant to 23 CCR Subsections 2510(b) and (c).

9. Areas with slopes greater than 10 percent, surface drainage courses, and areas subject to erosion by wind or water shall be designed and constructed to minimize such erosion.

10. The discharger shall maintain at least 5 feet separation between ground water and waste material at all times.

11. Precipitation and drainage control systems designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface water runoff from a 24-hour, 100-year frequency storm event. Construction of the system shall be completed no later than October 1992.

12. During the rainy season a minimum 1-foot thickness of low permeability (1 x 10^{-6} cm/sec hydraulic conductivity or less) cover shall be maintained over all but the active disposal area of the landfill. The active landfill area shall be confined to the smallest area practicable based on the anticipated quantity of waste discharge and other operations.

13. Containment basins for runoff and for the underdrain system shall be lined to minimize infiltration to the ground water and shall be designed and operated at all times to maintain a freeboard of 2 feet. A leachate collection and removal system (LCRS) shall be installed beneath the liners. The liner and LCRS shall comply with the Chapter 15 construction standards for Class II impoundments.

14. Surface drainage from the landfill is subject to State Board Order No. 91-13-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001, "Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities". Pursuant to Order No. 91-13-DWQ, the discharger must file a Notice of Intent to the State Board no later than March 30, 1992.

15. Water collected from the underdrain and runoff system may be used for dust control, fire suppression, compaction of intermediate and final cover and other activities on the landfill site.

C. WATER QUALITY PROTECTION STANDARD

1. The water quality protection standard consists of the list of constituents of concern, the point of compliance, and all monitoring points identified in Monitoring and Reporting Program No.92-02 which is attached to and made a part of this Order. The list of constituents of concern, the point of compliance and all monitoring points may be modified upon approval of the Regional Board Executive Officer.

2. The concentration limit for each constituent of concern will be equal to the background value of that constituent. Pending approval by the Regional Board Executive Officer, the background values shall be established and updated using procedures proposed by the discharger in accordance with Chapter 15, Article 5 regulations and approved by the Regional Board Executive Officer.

D. PROVISIONS

1. Neither the treatment nor the discharge of waste shall create

a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code.

2. Prior to initial deposit of solid waste as permitted herein in the vertical expansion of the San Marcos Sanitary Landfill, a low permeability cover, overlain by a 12- to 18- inch thick permeable sand layer shall be placed over the original portion of the landfill. The cover shall consist of or be equivalent to a 2-foot thick continuous layer of clay having a permeability to water of 1×10^{-6} cm/sec or less. Construction of the cover cannot commence until the executive officer has approved the design plans. Waste shall not be placed in any area of the expansion until the executive officer has received written certification by a California registered civil engineer or certified engineering geologist that all the structures have been constructed in accordance with all design plans.

3. Intermediate and daily cover over wastes discharged to the landfill shall be designed and constructed to minimize percolation of precipitation through wastes. As proposed by the discharger and noted in the Findings of this Order, intermediate cover shall consist of or be equivalent to multiple 12-inch clay intermediate cover layers at 20-foot intervals within the 200-foot lift, each layer having a permeability of 10^{-6} cm/sec, and daily cover during the rainy season, October through March, shall have a permeability of 3×10^{-5} cm/sec.

4. The discharger shall comply with all applicable provisions of 23 CCR Chapter 15 and all conditions of this Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for: (a) enforcement action; (b) termination, revocation and re-issuance, or modification of this Order.

5. In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order.

6. The discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

7. The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the

discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate laboratory and process controls, including appropriate quality assurance procedures.

8. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.

9. This Order may be modified, revoked, and reissued, or terminated for causes, including, but not limited to, the following:

   a. Violation of any terms or conditions of this Order;

   b. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts; or

   c. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge. The filing of a request by the discharger for the modification, revocation and reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

10. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the discharger from liability under federal, state, or local laws, nor create a vested right for the discharger to continue the regulated activity.

11. The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

   a. Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

   e. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

12. A copy of this Order shall be maintained at the San Marcos Landfill and shall be available to operating personnel at all times.

13. This Order becomes effective on the date of adoption by the Regional Board. This Order 92-02 supersedes Orders No. 78-78 and 91-25. Orders No. 78-78 and 91-25 are hereby rescinded.

14. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

15. The Discharger shall comply with all applicable requirements of 23 CCR Chapter 15, Articles 8 and 9 for partial and final closure and post-closure maintenance plan for the San Marcos Landfill. No later than April 22, 1992, the discharger shall submit to the Board documentation on the initiation of the preparation of the required site closure and post-closure maintenance plan.

16. Based upon the finding, as stated in Finding No. 36 of this order, that there is statistically significant evidence of a release from the landfill, the discharger is required to comply fully with the provisions of Article 5, Chapter 15 CCR, including Section 2550.8. The required monitoring of ground water from private wells that might be affected by the landfill shall be conducted and reported on a quarterly frequency.

17. The County of San Diego shall submit to the Regional Board no later than April 22, 1992 a Water Supply Contingency Plan, approved by the County Board of Supervisors, for users of ground water that may have their ground water supply affected by the existing and expanded landfill. The contingency plan shall include measures to mitigate against impacts to ground water quality including guarantees of water supply service to surrounding and downgradient properties with private wells that are found to be adversely affected by the landfill.

E. REPORTING REQUIREMENTS

1. The discharger shall submit the following technical reports in accordance with the following time schedule, unless modified by the executive officer:

   a. REPORT: FINANCIAL ASSURANCES -- The discharger shall obtain and maintain Financial Assurances for the entire site acceptable to the executive officer, in order to assure completion of any corrective action for any

reasonably foreseeable release from the waste management unit.

DUE DATE: Prior to discharge of waste to the expansion area.

b. FINAL DESIGN REPORT - The discharger shall submit a detailed report for the development of the various components of the landfill, including detailed specifications and drawings for the construction of liners, covers, leachate collection and removal systems, drainage facilities, retention basins. The report shall include all designs and design calculations,and should include quality assurance & quality control procedures for all aspects of construction and installation. The report should include detailed specifications regarding the sequence and scheduling of construction of the various segments of the project. The report must be certified by a registered civil engineer in the State of California, who has a minimum of five years experience in landfill design and construction, and demonstrate that the design will result in compliance with this Order and the construction standards specified by 23 CCR Chapter 15 regulations.

DUE DATE: April 30, 1992

2. The discharger shall file a new Report of Waste Discharge at least 120 days prior to the following:

a. Significant change in the disposal method;

b. Change in the disposal location from that described in the findings of this Order;

c. Other circumstances which result in a material change in character, amount, or location of the waste discharge; or

d. Any planned change in the regulated facility or activity which may result in noncompliance with this Order.

3. The discharger shall furnish to the Executive Officer of this Regional Board, within a reasonable time, any information which the Executive Officer may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The discharger shall also furnish to the Executive Officer upon request, copies of records required to be kept by this Order.

4. The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this

Order's responsibility and coverage between the current discharger and a new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on.

5. The discharger shall comply with the attached Monitoring and Reporting Program No. 92-02.

6. Where the discharger becomes aware that it failed to submit any relevant facts in the technical report or submitted incorrect information in the technical report or in any report to the Regional Board, it shall promptly submit such facts or information.

7. The discharger shall report any noncompliance which may endanger health or the environment, such as slope failure occurring in the waste management unit or a failure which threatens the integrity of the containment features of the landfill or retention basins. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, or prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

8. The discharger shall conduct such monitoring as may be necessary in order to provide information requested by the Executive Officer.

9. If the discharger, through a detection monitoring program or the Regional Board finds that there is a statistically significant increase in the indicator parameters or waste constituents over the water quality protections standards at or beyond the point of compliance or at any monitoring point, the discharger shall notify the Regional Board or acknowledge the Regional Board's findings in writing within seven days. The discharger shall immediately resample for the constituents of parameters at the points where the standard was exceeded and within 90 days, the discharger shall submit to the Board the results of the resampling and either:

   a. A report demonstrating that the water quality protection

standard was violated; or

b. An amended Report of Waste Discharge for the establishment of a verification monitoring program, per 23 CCR Section 2557, which is designed to verify that water quality protection standards have been exceeded and to determine the horizontal and vertical extent of pollution.

10. If the discharger, through a verification monitoring program, or Regional Board verifies that water quality protection standards have been exceeded at or beyond the points of compliance or at any monitoring point, the discharger shall notify Regional Board or acknowledge Regional Board's finding in writing within seven days. Within 180 days, the discharger shall submit to Regional Board an amended Report of Waste Discharge for the establishment of a corrective action program, per 23 CCR Section 2558, which is designed to achieve compliance with the water quality protection standards.

11. The discharger shall immediately notify Regional Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.

12. The discharger shall maintain legible records of the amount (volume or weight) and type of each waste discharged at the landfill.

13. The discharger shall notify the Regional Board at least 180 days prior to the beginning of any activities for partial or final closure of the landfill, in accordance with 23 CCR Subsection 2590 (c)(1).

14. All applications, reports, or information submitted to the Executive Officer of this Regional Board shall be signed and certified as follows:

a. The Report of Waste Discharge shall be signed as follows:

1. **For a corporation** - by a principal executive officer of at least the level of vice-president;

2. **For a partnership or sole proprietorship** - by a general partner or the proprietor, respectively;

3. **For a municipality, state, federal or other public agency** - by either a principal executive officer or ranking elected official; and

4. **For a military installation** - by the base commander or the person with overall responsibility for environmental matters in that branch of the military.

b. All other reports required by this Order and other information required by the Executive Officer shall be signed by a person designated in paragraph (a) of this provision, or by a duly authorized representative of that person. An individual is a duly authorized representative only if:

1. The authorization is made in writing by a person described in paragraph (a) of this provision;

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and

3. The written authorization is submitted to the Executive Officer.

c. Any person signing a document required by this Order and other information required by the Executive Officer shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

15. The discharger shall submit reports required under this Order and other information requested by the Executive Officer, to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
9771 Clairemont Mesa Blvd., Suite B
San Diego, California 92124-1331

16. On a quarterly schedule, the discharger shall submit the following written reports to the Regional Board:

a. Progress Report on the County of San Diego's efforts to site new landfills in the county, particularly in the

North County area. This report shall also include the progress on implementing the closure and post-closure maintenance plans for the landfill.

b. Quarterly monitoring reports containing the ground water quality data derived from private wells in accordance with the work specified in Article 5, Chapter 15 of CCR as required in Provision D.16 of this order.

The quarterly schedule for submitting the abovementioned reports will coincide with the following quarterly schedule of Monitoring and Reporting Program No. 92-02:

Report Period	Report Due Date
January - March	April 30
April - June	July 30
July - September	October 30
October - December	January 30

F. **NOTIFICATIONS**

1. No discharge of waste to the waters of the state, whether or not such discharge is made pursuant to waste discharge requirements, shall create a vested right to continue such discharge. All discharges of waste into waters of the state are privileges, not rights.

2. These requirements have not been officially reviewed by the United States Environmental Protection Agency and are not issued pursuant to Section 402 of the Clean Water Act.

3. The California Water Code provides that any person who intentionally or negligently violates any waste discharge requirements issued, reissued, or amended by this Regional Board is subject to administrative civil liability of up to ten dollars per gallon of waste discharged, or, if no discharge occurs, up to one thousand dollars per day of violation. The Superior Court may impose civil liability of up to ten thousand dollars per day of violation or, if a cleanup and abatement order has been issued, up to fifteen thousand dollars per day of violation.

4. The California Water Code provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this Order, or falsifying any information provided in the monitoring reports is guilty of a misdemeanor and may be subject to administrative civil liability of up to one thousand dollars per day of violation.

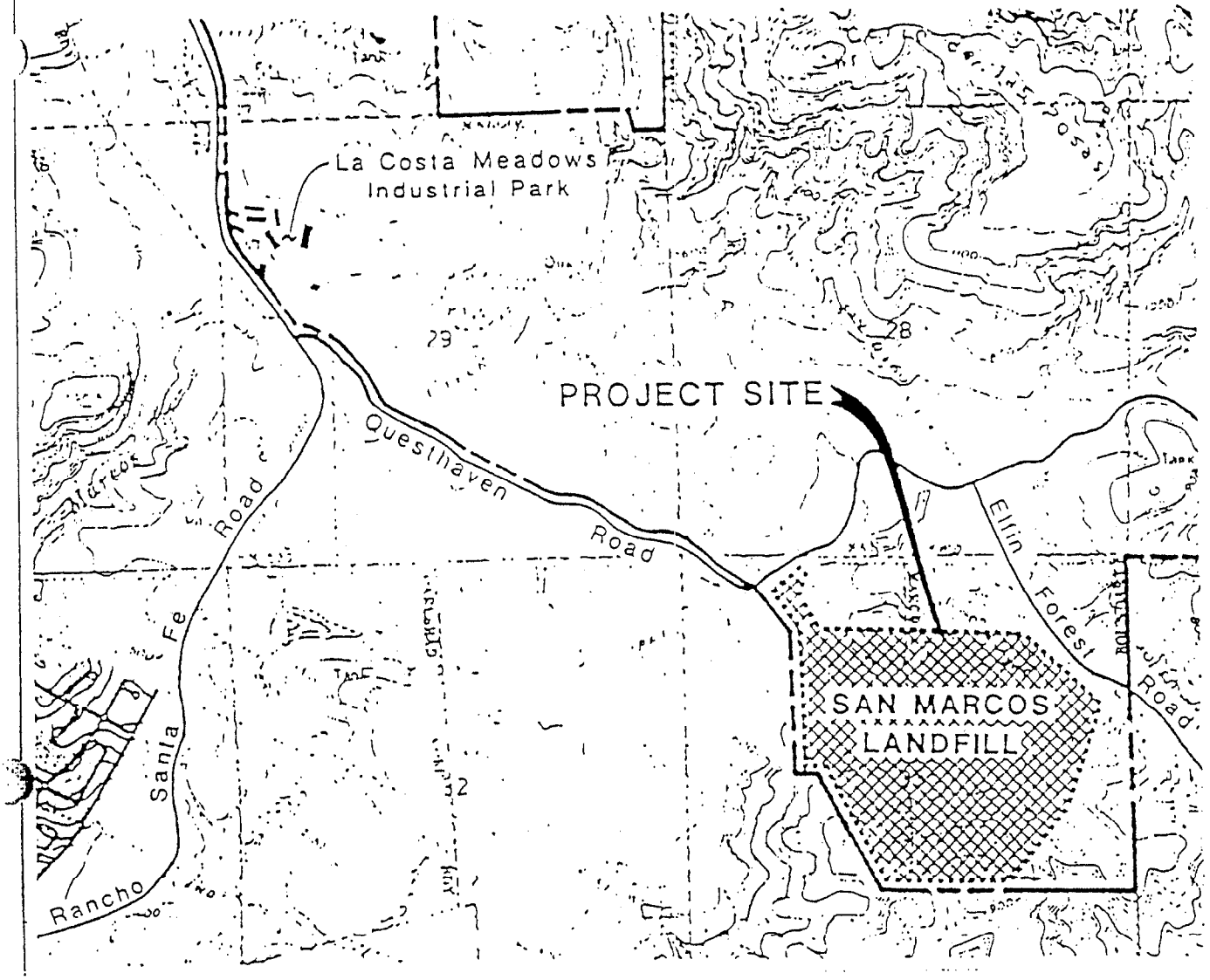
5. Definitions of terms used in this Order shall be as set forth in 23 CCR Chapter 15.

6. Operation of the San Marcos Landfill may be subject to regulations of the California Waste Management Board.

7. This Order becomes effective on the date of adoption by the Regional Board.

I, Arthur L. Coe, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on January 22, 1992.

Arthur L. Coe
Executive Officer

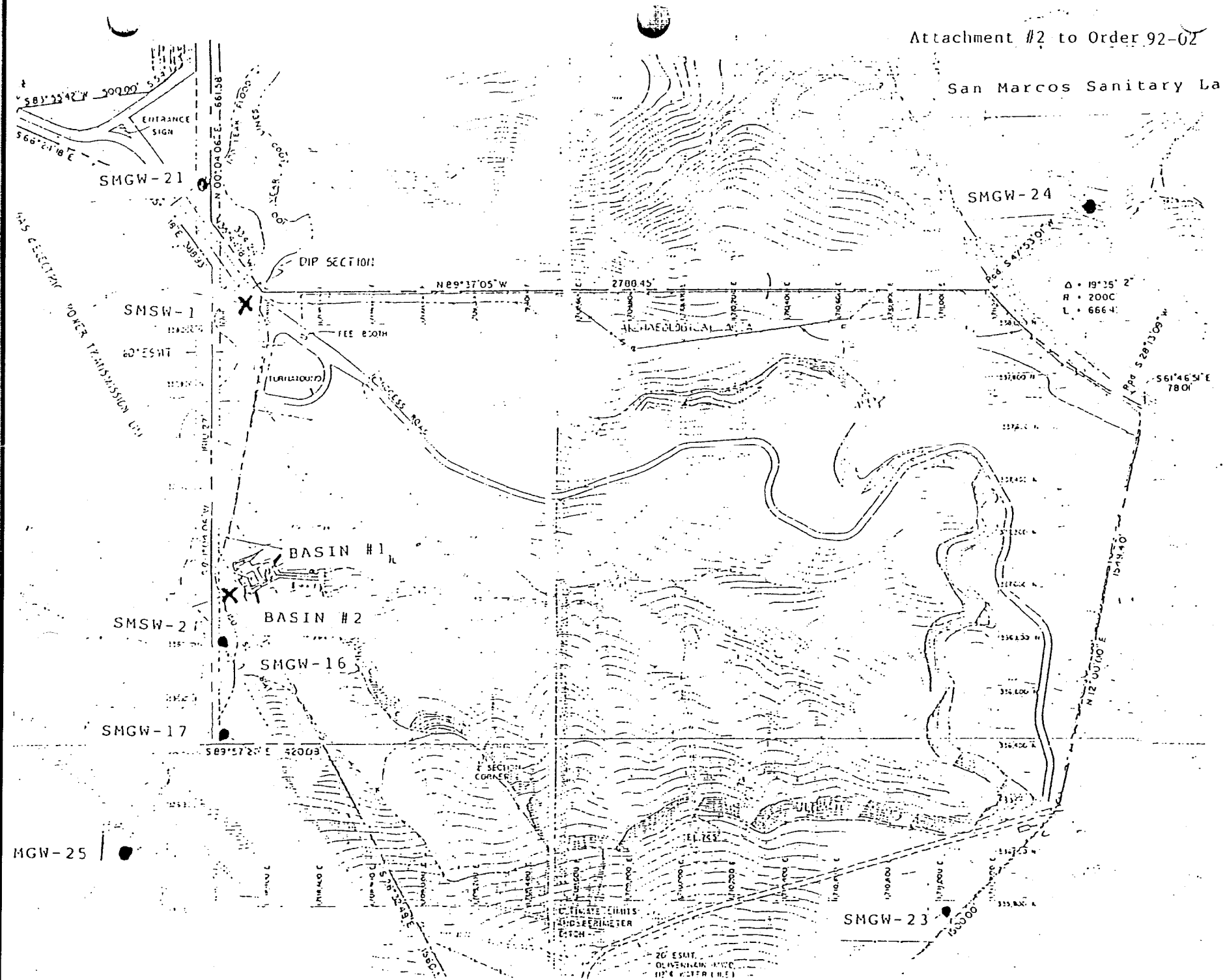


Attachment #1 to Order 92-02

San Marcos Sanitary Landfill

Attachment #2 to Order 92-02

San Marcos Sanitary Landfill



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

MONITORING AND REPORTING PROGRAM NO. 92-02

COUNTY OF SAN DIEGO
SAN MARCOS SANITARY LANDFILL

SAN DIEGO COUNTY

A. GENERAL MONITORING PROVISIONS

1. Monitoring must be conducted according to United States Environmental Protection Agency test procedures approved under Title 40, Code of Federal Regulations (**CFR**), Parts 136, "Guidelines Establishing Test Procedures for Analysis of Pollutants Under the Clean Water Act" as amended, unless other test procedures have been specified in this Order.

2. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

3. If the discharger monitors any pollutants more frequently than required by this Order, using test procedures approved under 40 CFR, Part 136, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report. The increased frequency of monitoring shall also be reported.

4. All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

5. A composite sample is defined as a combination of at least 8 sample aliquot of at least 100 milliliters, collected at periodic intervals during the operating hours of the landfill. For volatile pollutants, aliquot must be combined in the laboratory immediately before analysis.

6. A grab sample is an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

7. The water quality monitoring program shall include consistent sampling and analytical procedures that are designed to ensure

that monitoring results provide a reliable indication of water quality at all monitoring points and background monitoring points.

8. The discharger shall propose one of the following statistical methods for analyzing surface and ground water monitoring data:

   a. A parametric analysis of variance (**ANOVA**) followed in all instances by a multiple comparison procedure to identify statistically significant evidence of a release from the landfill. The method shall include estimation and testing of the contrasts between each monitoring point's mean and background mean value for each constituent or parameters;

   b. An ANOVA based on ranks followed in all instances by multiple comparisons procedure to identify statistically significant evidence of a release from the waste management unit. The method shall include estimation and testing of the contrasts between each monitoring well point's median and the background median values for each constituent of concern or monitoring parameter;

   c. A tolerance or prediction interval procedure in which an interval for each constituent of concern or monitoring parameter is established from the distribution of the background data, and the value for each constituent of concern or monitoring parameter at each monitoring point is compared to the upper tolerance or prediction limit;

   d. A control chart approach that gives control limits for each constituent of concern or monitoring parameter; or

   e. Any statistical method which includes a procedure to verify that there is statistically significant evidence of a release from the waste management unit.

9. The discharger shall describe in detail the criteria to be used for determining: (a) a statistical significant evidence of any release from the landfill; and (b) compliance with the water quality protection standards.

B. <u>RECORDS AND REPORTING</u>

1. The discharger shall retain records of all monitoring information, including all calibration and maintenance records, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of

any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

2. The following records of monitoring information shall be retained:

   a. Date, exact place, and time of sampling or measurements;

   b. Individual(s) who performed the sampling and field measurements;

   c. Date(s) analyses were performed;

   d. Analytical techniques or methods used;

   e. Results of such analyses;

   f. Detection limit for each parameter measured; and

   g. Laboratory quality assurance results (percent recovery, response factor, etc.).

3. The discharger shall submit quarterly reports of the analyses obtained for all samples taken. The reports shall include the following information:

   a. Field monitoring parameters, sample identifications, and chain-of-custody sheets;

   b. The method detection limit (MDL);

   c. Measured concentrations found in the current sampling event;

   d. The laboratory quality assurance data performed during sample analyses. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing analyses: and

   e. The statistical data and a determination of whether there is a statistically significant increase over water quality protection standards for each parameter and constituent at each non-background monitoring point.

C. **CONSTITUENTS OF CONCERN**

The constituents of concern have been identified by the

discharger in Appendix F "Detection Monitoring Program" to the report "Response to Order No. 91-25, dated December 6, 1991. The discharger shall monitor for all constituents of concern at all monitoring points at least once every five years.

D. **SITE OPERATION PLAN:**

Annually, the discharger shall submit a report containing the following information:

1. An up-to-date site map of scale 1 inch = 100 feet showing: (a) ground and waste elevation;(b) waste boundaries;(c) excavated areas; (d) drainage control facilities; (e) surface water sampling locations; (f) ground water monitoring wells; and (g) runoff retention and underdrain catchment basins.

2. The estimated total volume of wastes deposited in the landfill and the estimated capacity remaining.

3. A description of the actions taken to prevent erosion or flooding of the facility and to minimize surface runoff from contacting or percolating through wastes.

4. A description of the solid waste discharged to the landfill during the monitoring period. The description shall specify the type and quantity of waste discharged and if appropriate, the source of the waste discharged to the site. Types of material may be noted as: municipal waste; contaminated soil (note source); sewage sludge (note moisture content); auto shredder fluff (note source); non-hazardous ash (note source); drilling mud (note moisture content and source); asbestos containing waste; etc.

5. An assessment that documents the effectiveness of the periodic load-checking program and describes any new control measures being implemented to improve the program.

6. A summary of the findings of periodic inspections conducted by the discharger of the site during the monitoring period, including any significant findings with regard to general site conditions; surface cover and slope; drainage facilities; monitoring facilities; methane gas control system; seepage; maintenance; etc.

E. SURFACE WATER MONITORING

1. When flow is occurring, a grab sample of surface water shall be taken at points upstream and downstream of the landfill. The time and frequency of monitoring shall be dependent upon flow conditions in the Copper Creek. When possible,a minimum of four sampling rounds shall be conducted per year. For each

sampling station, pH, electroconductivity, temperature, odor, color and general appearance shall be recorded onsite. Surface water samples shall be analyzed for the following constituents:

Constituents	Units	Reporting Frequency
1,1-Dichloroethane	ug/l	Annually
Methylene Chloride	ug/l	Annually
1,1,1-Trichloroethane	ug/l	Annually
Trichlorofluoromethane	ug/l	Annually
Total Dissolved Solids	mg/L	Annually
Total organic carbon	mg/L	Annually
Nitrogen (as ammonia, nitrate, kjeldahl)	mg/L	Annually
COD	mg/L	Annually

Note: mg/L = milligram/liter
ug/L = micrograms/liter

2. Annually, the discharger shall report the approximate flow rate in Copper Creek each time the Creek is sampled. The discharger should report, if during the monitoring period, no water flowed in the Copper Creek.

F. UNSATURATED ZONE MONITORING

1. Unsaturated zone monitoring beneath the landfill within the fractured metavolcanics is not required.

2. Within 90 days of adoption of Order No.92-02, the discharger shall submit a report describing a program and its feasibility for monitoring moisture beneath and above the clay cover/liner to be constructed between the existing landfill and the proposed vertical expansion. The objective of the monitoring program is to provide an early detection of leachate migration through the cover/liner into the underlying landfill material.

G. GROUND WATER DETECTION MONITORING PROGRAM

1. At a minimum, the monitoring wells shall be constructed, developed, and maintained in accordance with Chapter 10 of California Water Code and California Water Well Standards, Bulletin No. 74-90, or better well standards. Soil shall be described according to the Unified Soil Classification System and logged by a California registered geologist. Copies of the logs and as-built specifications of the wells shall be submitted to the Regional Board.

2. Prior to sampling monitoring wells, the presence of a floating

immiscible layer in all wells shall be determined at the beginning of each sampling event. This shall be done prior to any other activity which may disturb the surface of the water in a well, e.g. water level measurements. If an immiscible layer is found, it must be sampled, analyzed and reported.

3. Prior to sampling monitoring wells, the water standing in the casing shall be purged until the water chemistry has stabilized with respect to pH and specific conductance. Integrity of the samples should be considered in selecting sampling equipment.

4. Field logs used during well purging shall be included in the monitoring reports. The information contained in these logs shall include: the method of monitoring the field parameters, calibration of the field equipment, method of purging (if a pump is used, include pump placement and pumping rate), date each well was purged, well recovery time, method of disposal of the purged water, an estimate of volume of water purged from each well, the results of all field analyses, well number, date, depth to ground water, method of measuring the water level, and field personnel signatures.

5. Within 90 days of adoption of this Order, the discharger shall submit a workplan and design, for approval by the executive officer, to install additional monitoring well(s) that intercept the Copper Creek lineament, trending N20°E from Copper Creek north along the western boundary of the landfill. The discharger shall install the new monitoring well(s) within 90 days of approval of the proposal. The new well(s) will then be included as part of the monitoring network.

6. The ground water monitoring network shall consist as a minimum of monitoring wells SMGW-16,-17,-23,-24,-26,-30D,-30S,-31, -33,-37S, -37D, and the new well(s) required by Requirement G.5 of this program.

7. Off-site ground water monitoring shall be conducted as specified in Provision D.16 and Reporting Requirement E.16.b. By April 1, 1992 the discharger shall submit for approval by the Regional Board Executive Officer a comprehensive list of the off-site, private property wells that will be monitored quarterly. The water quality constituents analyzed for are specified in G.8 of this Monitoring and Reporting Program.

8. All ground water monitoring wells shall be sampled monthly for one year and quarterly thereafter. Samples shall be analyzed for the following constituents:

Constituents	Units	Reporting Frequency	
		1st year	Subsequent years
Total Dissolved Solids	mg/L	Monthly	Quarterly
COD	mg/L	Monthly	Quarterly
Iron	mg/L	Monthly	Quarterly
Nitrogen (as ammonia, nitrate,Kjeldahl)	mg/L mg/L	Monthly	Quarterly
1,1-Dichloroethane	ug/L	Monthly	Quarterly
Methylene Chloride	ug/L	Monthly	Quarterly
1,1,1-Trichloroethane	ug/L	Monthly	Quarterly
Trichloroethane	ug/L	Monthly	Quarterly

Note: ug/L = micrograms/liter

9. Each time a well is sampled, the depth to ground water shall be measured and the ground water elevation above sea level and the date of the measurements shall be reported. If no ground water is found in the monitoring wells during the sampling period, the discharger should state so.

H. UNDERDRAIN/RUNOFF WATER MONITORING

1. The discharge to the retention basin from the underdrain system shall be monitored for the same constituents as specified for ground water monitoring. The time and frequency of monitoring shall be dependent upon flow conditions from the underdrain. When possible, four sampling rounds shall be conducted per year. The water quality protection standards do not apply to the discharge to the retention basin.

2. The discharge of runoff from the landfill to the retention basin shall be monitored for the same constituents as specified for ground water monitoring. The time and frequency of monitoring shall be dependent upon runoff quantities. When possible four sampling rounds shall be conducted per year. The water quality protection standards do not apply to storm water runoff to the retention pond.

3. Annually, the discharger shall report the total amount of water discharged from the underdrain system. The discharger shall report if no water is discharged from the underdrain system during the sampling period.

I. WATER QUALITY PROTECTION STANDARDS:

Water Quality Protection Standards (WQPS) shall be established

by the Regional Board executive officer based upon the results of the monitoring program. Samples obtained from the designated background wells shall be used to determine the water quality protection standard for each monitoring parameter and constituent of concern. The protection standard shall be a "moving window" based upon the arithmetic mean and standard deviation of the sample data generated within the preceding 12 months.

If the discharger determines there is statistically evidence of a release from the landfill for any monitoring parameter at any ground or surface water monitoring point, the discharger shall comply with applicable provisions of 23 CCR Sections 2550.8 (j) and (k).

J. REPORTING SCHEDULE

The monitoring reports shall be submitted to the Executive Officer in accordance with the following schedule:

Reporting	Monitoring Period	Report Due Date
Monthly	January, February, March, etc.	by the 30th of the following month
Quarterly	January - March	April 30
	April - June	July 30
	July - September	October 30
	October - December	January 30

Ordered By _____
Arthur L. Coe
Executive Officer
January 22, 1992

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 1
TO
ORDER NO. 92-02

AN ADDENDUM MODIFYING THE
TIME SCHEDULE FOR COMPLETION OF
STORM PROTECTION MEASURES AT

COUNTY OF SAN DIEGO
SAN MARCOS SANITARY LANDFILL

SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that:

1. On January 22, 1992, this Regional Board adopted Order No. 92-02, "Waste Discharge Requirements for County of San Diego San Marcos Sanitary Landfill, San Diego County". Order No. 92-02 established requirements for the protection of water quality from potential impacts caused by the disposal of nonhazardous municipal waste at the landfill.

2. Discharge Specification B.11 of Order 92-02 states the following:

   "B.11 Precipitation and drainage control systems shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface water runoff from a 24-hour, 100-year frequency storm event. Construction of the system shall be completed no later than October 1992."

3. By letter dated October 29, 1992, the County of San Diego Department of Public Works submitted a revised time schedule for completion of the precipitation and drainage control measures at the landfill. The County of San Diego noted that legal challenges and the regulatory process for obtaining a Solid Waste Facility Permit have caused delays in complying with the deadline specified by Discharge Specification B.11 of Order No. 92-02.

4. The Regional Board has notified all known interested parties of its intent to modify the schedule for completion of the precipitation and drainage control measures specified by Order No. 92-02.

5. The Regional Board in a public hearing heard and considered all comments pertaining to the modification of Order No. 92-02.

6. Finding No. 13 of Order No. 92-02 states that the County of San Diego certified a final environmental impact report (EIR) for the landfill in accordance with the California Environmental Quality Act, Public Resources Code Section 21000, on November 13, 1990. As noted by Finding No. 15, the County of San Diego certified a Supplemental Environmental Impact Report (SEIR) on December 17, 1991 in response to a decision of the Superior Court in the County of San

Diego that the EIR did not adequately address the surface and ground water impacts associated with landfill operations.

7. Subsequent to the adoption of Order No. 92-02, the San Diego County Superior Court issued a writ of mandate on July 24, 1992 based upon findings that the County's SEIR for the vertical expansion of the landfill was inadequate. As a result of the ruling, the County was precluded from proceeding with the construction of certain mitigation measures, including the precipitation and drainage control measures required by Order No. 92-02 Discharge Specification B.11.

8. On August 24, 1992, the San Diego County Superior Court ruled that the County had adequately addressed the potential impacts of the clay clap and liner mitigation measure and the County of San Diego's Return to Peremptory Writ of Mandate is deemed adequate.

IT IS HEREBY ORDERED THAT Discharge Specification B.11 of Order No. 92-02 is modified as follows:

"B.11 Precipitation and drainage control systems shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface water runoff from a 24-hour, 100-year frequency storm event. Construction of the system shall be completed no later than June 30, 1993."

I, Arthur L. Coe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order/Resolution/Addendum adopted by the California Regional Water Quality Control Board San Diego Region, on December 14, 1992.

Arthur L. Coe
Executive Officer

FILE: 06-0278.02

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 2
TO
ORDER NO. 92-02

AN ADDENDUM MODIFYING THE
WASTE DISCHARGE REQUIREMENTS
FOR THE
COUNTY OF SAN DIEGO
SAN MARCOS SANITARY LANDFILL
SAN DIEGO COUNTY

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On January 22, 1992, this Regional Board adopted Order No. 92-02, "Waste Discharge Requirements for County of San Diego San Marcos Sanitary Landfill, San Diego County." Order No. 92-02 established requirements for the protection of water quality from potential impacts caused by the disposal of nonhazardous municipal solid waste at the landfill.

2. Subsequently, petitions for review of Order No. 92-02 were filed with the State Water Resources Control Board (State Water Board). On June 17, 1993, the State Water Board adopted Order No. WQ 93-8. All findings and conclusions of Order No. WQ 93-8 have been added to Order No. 92-02 which required the following additional containment and water quality protection features to be installed or incorporated: 1) an enhanced gas collection and venting system; 2) settlement plates or other suitable settlement measuring devices; and 3) moisture sensors. In addition, WQ 93-8 also required that upon commencement of operation of the landfill's recycling center, that at least 75% of all waste disposed at the landfill be no greater than 4" in size.

3. On April 3, 1995, the County of San Diego (hereinafter discharger), submitted a Report of Waste Discharge (RWD) to request the deletion of Discharge Specification No. B.16 since the discharger can no longer afford to operate the NCRRA plant. This is due to the reduction in solid waste disposal at the landfill due to high tipping fees which resulted from the operation of the NCRRA plant.

4. The technical information contained in the RWD to justify deletion of Discharge Specification B. 16 included the following:

a. Calculations of densities of unshredded waste at Otay Landfill and shredded waste at San Marcos Landfill based on aerial photogrammetric maps and volumes of refuse accepted at each landfill, excluding the soil used for daily cover. The calculations indicate that there is a slight difference between the unshredded density of 1400 lbs/yd^3 and shredded density of 1500 lbs/yd^3.

b. The load on the clay layer is not expected to be significantly different, since the compactive effort will be the same for the waste.

c. Settlement plate data which was gathered from date of installation (mid-1993) to December 1994. The settlement plates were monitored monthly and then quarterly after September 1994. The settlement rates reported seem to vary with depth of fill as described in the settlement program developed for the landfill. The maximum settlement reported is 11.51'(with 45' of surcharge above the settlement plate).

5. The County proposes to install 4 additional settlement plates along the centerline of the landfill to monitor the settlement of the shredded material along with the unshredded waste which underlies the 750' clay layer. This will provide continued evaluation of compaction and settlement of the waste disposed at the landfill.

6. This facility is an existing facility and as such is exempt from the provisions of the California Environmental Quality Act in accordance with Title 14, California Code of Regulations, Chapter 3, Article 19, Section 15301.

7. The Regional Board has considered all water resources related environmental factors associated with the discharge.

8. The Regional Board has notified the discharger and all known interested parties of the intent to revise waste discharge requirements for the discharge.

9. The Regional Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED THAT: 1) Discharge Specification B. 16 be deleted from Order No. 92-02 and that Discharge Specification B.17 be renumbered as B.16 and 2) Add Discharge Specification B. 17 as follows:

" B.17 The discharger shall install four additional settlement plates along the centerline of the landfill and submit settlement plate data quarterly."

I, Arthur L. Coe, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on May 16, 1995.

Arthur L. Coe
Executive Officer